



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,042	02/17/2004	Nam-Sung Cho	2791-008	9261

22208 7590 07/13/2006

ROBERTS ABOKHAIR & MARDULA
SUITE 1000
11800 SUNRISE VALLEY DRIVE
RESTON, VA 20191

EXAMINER

THOMPSON, CAMIE S

ART UNIT PAPER NUMBER

1774

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/780,042	CHO ET AL.	
	Examiner	Art Unit	
	Camie S. Thompson	1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed 4/21/2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-11 and 13-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-2, 6-11 and 13-16 is/are allowed.
- 6) ☒ Claim(s) 4 and 5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's amendment and accompanying remarks filed April 21, 2006 have been acknowledged.
2. Examiner acknowledges amended claims 1 and 11.
3. Examiner acknowledges cancelled claims 3 and 12.
4. The rejection of claims 1-3 and 6-10 under 35 U.S.C. 112, second paragraph as being indefinite is withdrawn due to applicant's amended claims 1 and 11.

Priority

5. Certified copies of the National Stage application have not been received. In order to claim foreign priority, applicant must submit certified copies of the priority documents.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

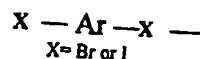
A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

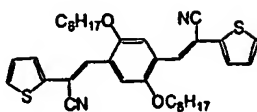
7. Claims 4-5 are rejected under 35 U.S.C. 102(a) as being anticipated by Beaupre et al., *Optical and Electricla Properties of π -Conjugated Polymers Based on Electron-Rich 3,6-Dimethoxy-9, 9-dihexylfluorene Unit*.

Art Unit: 1774

The reference discloses a comonomer with the structure

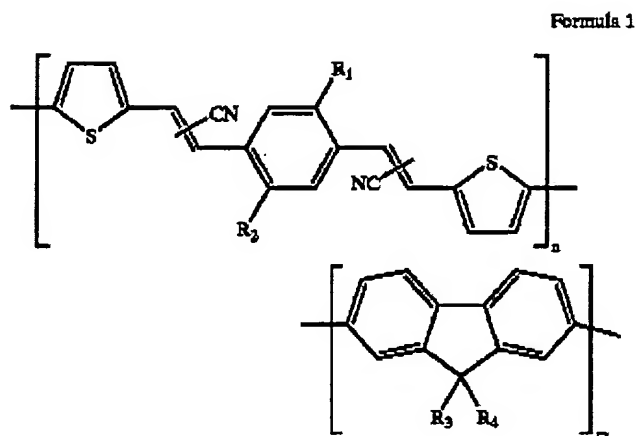


$\text{Ar} =$



The reference reads on instant claims 4 and 5 when R_1 and R_2 represent the alkyl group C_6H_{13} .

8. Claims 1-2, 6-11 and 13-16 are allowed. The prior art does not provide for a light-emitting copolymer represented by the following formula



wherein R_1 and R_2 represent silyl groups, alkyl groups or alkoxy groups; R_3 and R_4 represent alkyl groups; and "n" represents a first monomer and "m" represents a second monomer, and

Art Unit: 1774

wherein a ratio of n/m ranges from 17.5/82.5 to 1.4/98.6 and wherein the copolymer is poly{[9,9-bis(2'-ethylhexyl)fluorene]_m-[2,7-diyl-co-2,5-bis(2-thienyl-1-cyanovinyl)-1-(2'-ethylhexyloxy)-4-methoxybenzene-5'', 5''-diyl]}_n and wherein a comonomer is 2,5-bis{2-(4-bromothienyl)-1-cyanovinyl}-2(2-ethylhexyloxy)-5-methoxybenzene.

Response to Arguments

9. Applicant's arguments filed April 21, 2006 have been fully considered but they are not persuasive. Applicant claims priority to the PCT Patent Application PCT/KR02/01514.

However, applicant has not provided the US Patent & Trademark Office with the proper priority documents to claim priority to the PCT application or the Korean Patent Application. Applicant has submitted the publish PCT application as a foreign reference. Applicant has not filed the present invention with the Office as a continuation of the PCT filed 8 August 2002.

Additionally, applicant did not claim priority at the time of U.S. filing. Therefore, the rejection is maintained.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 1774

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (571) 272-1530. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena L Dye, can be reached at (571) 272-3186. The fax phone number for the Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



RENA DYE

SUPERVISORY PATENT EXAMINER

A.U. 1774 7/7/04